

Date of Deposit: January 24, 2002

ABSTRACT

An imager cell includes a photoreceptor, a sense node, and a pinned transfer gate. The pinned transfer gate is disposed to transfer charge between the photoreceptor and the sense node. The imager further includes a reset transistor disposed to reset the sense node, and an output amplifier coupled to the sense node. Control circuitry supplies a photoreceptor readout clock to the photoreceptor. The readout clock includes an integration period and a transfer period. During the integration period, the readout clock is at an integration voltage $V+$ which may be varied to setup a desired charge capacity in the photoreceptor. A thin gate structure or light aperture may be included to enhance blue light response of the photoreceptor. Thus, the imager cell provides improved noise performance, selective charge capacities, and improved blue light response beyond that of conventional imager cells.

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